REMARKS

The office action mailed 9 December 2005 indicates that the request for a corrected filing receipt to correct the inventor's name to Allen Le Roy LIMBERG, filed with the Office of Initial Examination's Customer Service Center, has still not been acted upon. LIMBERG, not ROY, is applicant's family name. Allen Le Roy is applicant's given name, which is three words. Applicant requests the Examiner's help and advice in getting this matter corrected.

Claims 1-33 are active in this application. Claims 4 - 21 and 26 - 32 are allowed.

Objections to Claims 22, 24 and 25

Claims 22, 24 and 25 are objected to as being dependent upon a rejected base claim, but were indicated to be allowable if rewritten in independent form including all the limitations of the base claim. Applicant requests that the rewriting of claims 22, 24 and 25 be deferred until the patentability of the base claims has been finally considered.

Claim Rejections - 35 USC § 102

Claims 1 and 3 are rejected under 35 U.S.C. 102(b) as being anticipated by U. S. patent No. 4,145,720 (Weintraub *et alii*), which rejections are traversed.

The reference is completely mis-characterized in the office action, and applicant's own disclosure is drawn upon to interpret what Figure 2 represents. Prior art patents are references only for what they clearly disclose or suggest; it is not proper use of a patent as a reference to modify its structure to one which prior art references do not suggest. **In re Randol & Redford**, 425 F2d. 772, 57 P.A. 1085, 165 USPQ 586, 588 (CCPA 1970).

Column 3, lines 17-19, in patent No. 4,145,720 indicate that "Figure 2 is a block diagram of the internal circuitry of Model 2, E. G. R. C. for the remote control of television reception." Judging from column 1, lines 9-16, E. G. R. C. is an abbreviation for an **e**lectronic **g**uided **r**emote **c**ontrol device which demodulates a radio-frequency signal supplied thereto by an antenna, processes the demodulated signal for altering the modulating signal recovered through demodulation, and modulates a carrier wave with the altered modulating signal for *wireless*

transmission to the receiving device to be remotely controlled. I. e., Figure 2 shows the internal electronics of a wireless TV remote control sometimes referred to as a "rabbit", Rabbit being a brand name that has acquired secondary significance. The tuner in this type of TV remote control is designed to be manually controlled by the user after the signals have passed down from the antenna via the downlead. This is completely at odds with applicant's apparatus where the tuner is electrically controlled, is nearby the antenna, and is designed to drive a *transmission line* connection to further TV receiver apparatus.

Since everything in Figure 2 is packaged together as a remote control device, it is indisputable that the channel selector **22** is not remotely located from the RF amplifier **17** and the mixer **18**. Channel selector **22** is part of apparatus for supplying remote control information to a television receiver receptive of signals sent by the Figure 2 remote control device. However, channel selector **22** is not part of apparatus for supplying remote control information that is separately packaged from the tuner elements **17 - 20**, **22** and **23**, which is necessary for applicant's claim 1 invention to be anticipated. Applicant's claim 1 specifies "said tuner further equipped for driving a first end of a transmission line several meters long with said intermediate-frequency signals to be supplied from a second end of said transmission line to further digital television signal reception apparatus that recovers baseband digital television signals, said tuner separately packaged from said further digital television signal reception apparatus and an apparatus for supplying remote control information" and "said one of the radio-frequency signals being selected for reception responsive to said remote control information supplied from ***said*** apparatus for supplying remote control information".

The limitation "said tuner separately packaged from said further digital television signal reception apparatus and an apparatus for supplying remote control information" is not met in still another way by Figure 2 of the Weintraub *et alii* patent No. 4,145,720. Their tuner **17 - 20**, **22** and **23** is packaged together with apparatus for supplying remote control information **29 - 36**. Indeed, such packaging together is essential to their remote control invention.

Putting the Weintraub *et alii* TV remote control up on a mast with an outdoor antenna as an antenna amplifier seems so silly that is unlikely to have been seriously entertained by one of

ordinary skill in the art. The viewer would have to go outdoors and climb up to the antenna to change channels for a TV set in the house.

Applicant's claim 1 specifies "said tuner designed to generate intermediate-frequency signals responsive to selected ones of radio-frequency signals transmitted over the air from terrestrial television broadcast transmitters and received by an antenna nearby said tuner". Patent No. 4,145,720 does not indicate that the antenna **16** is nearby their tuner **17 - 20, 22** and **23**.

The Office Action is mistaken in asserting that Figure 2 of Weintraub *et alii* shows an electrically controlled front-end circuitry (17) and a first electrically controlled frequency conversion circuitry (18).

There is nothing in patent No. 4,145,720 to indicate that RF amplifier **17** is "electrically controlled" as called for in applicant's claim 1. The channel selector **22** in Figure 2 of that patent controls the oscillator **23** as well as the RF amplifier **17**. This suggests to one of ordinary skill in the art of TV receiver design that the channel selector **22** is a rotary switch with inductors (as made by Oak), some sort of slug tuner, or another manually operated mechanical control for the front end circuitry. The abstract confirms this to be the case. Weintraub *et alii* specified "means located at said control apparatus for ***manually*** varying the channel selection of the tuner" as element c of their claim 1 for "Remote television channel selection and plural function control apparatus".

There is nothing in patent No. 4,145,720 to indicate that mixer **18** is electrically controlled conversion circuitry. A mixer mixes an RF signal with local oscillations and it is unclear why such operation would be electrically controlled. The oscillator **23** would usually be the controlled element in conversion circuitry, but as indicated above all indications are that the frequency of the local oscillator is manually controlled, rather than electrically controlled.

If the Examiner considers rejecting claim 1 under 35 U.S.C. 102 as being unpatentable over Weintraub *et alii*, it is pointed out that there is currently no evidence at all of any incentive in the prior art to modify the Weintraub *et alii* apparatus to control the channel selection of the tuner electrically, rather than mechanically. Weintraub *et alii* specified manual control of channel selection, and it is a critical element in their claimed invention. The idea of a remote control for a remote control seems far-fetched indeed, and this is indicative that impermissible reconstruction

using applicant's disclosure as blueprint is the motivation for the modification. The mere fact that the prior art could be modified in the manner proposed by the examiner would not have made the modification obvious unless the prior art suggested the desirability of the modification. ***Ex parte* Dussaud**, 7 USPQ2d 1818,1820 (PTOBA&I 1988). Within the circumstances presented by the Weintraub *et alii* apparatus, one might add.

Claim 1 distinguishes over the Weintraub *et alii* patent No. 4,145,720 by reciting "a cable-driver amplifier having an input port connected to receive said frequency-selective amplified response to said first intermediate-frequency signal from the output port of said first electrically controlled front-end and having an output port equipped for supplying a further amplified response to said first intermediate-frequency signal to said transmission line and thence to said further digital television signal reception apparatus via said transmission line, rather than said intermediate-frequency signals being directly supplied from said intermediate-frequency voltage amplifier to said further digital television signal reception apparatus". The rejection of claims 1 and 3 asserts that element **20** in Figure 2 of Weintraub *et alii* is a cable-driver amplifier connected to a transmission line which has a predetermined length. There is no apparent basis for such assertion. Figure 2 indicates that element **20** is an intermediate-frequency amplifier. Column 6, lines 9-16, of patent No. 4,145,720 describing element **20** read as follows:

> The intermediate frequency signal passes into the intermediate frequency amplifier (19) whereby it is amplified. Then it passes into intermediate frequency amplifier (20) where it is amplified a second time. Thereafter the amplified intermediate frequency signal passes through the demodulator (21) whereby the radio frequency carrier is separated from the video-audio-color signal.

There is no other reference to element **20**, and there is nothing in the cited lines to suggest that element **20** is a cable-driver amplifier. Lacking any indication to the contrary, one skilled in the art presumes that the intermediate-frequency amplifier **20** is no different from the second-stage 45 MHz intermediate-frequency amplifiers in common use at the time. There is no evidence in the current record that a cable-driver amplifier was used as second-stage intermediate-frequency amplifier at that time. There is nothing like a cathode follower to provide the low-source impedance needed to drive a cable without incurring echoes.

There is nothing in patent No. 4,145,720 to suggest prospectively a transmission line several meters long between the intermediate-frequency amplifier **20** and the demodulator **21**. Note the arrow coming from the auxiliary jack **24** towards the demodulator **21**. The arrow indicates the auxiliary jack **24** was intended to be an input connection, rather than an output connection through which a transmission line would be driven by the intermediate-frequency amplifier **20**.

Things which may be done, but are not required to be done, cannot be considered to be positive limitations in a claim directed to structure; they cannot be relied on to distinguish from prior art. **In re Collier**, 158 USPQ 266 (CCPA, 1968). Applicant is mindful of this in regard to the transmission line several meters long, but has the problem that his tuner for digital television signals may be sold without the transmission line in retail outlets. It is desirable that a manufacturer of these tuners be a direct infringer of applicant's claims, rather than an indirect infringer. The cable-driver amplifier is positively recited in applicant's claim 1. The utility of the cable-driver amplifier is disclosed in the rejected application, but is not suggested in enabling way in patent No. 4,145,720.

However, the claim 1 limitation " said tuner further equipped for driving a first end of a transmission line several meters long with said intermediate-frequency signals to be supplied from a second end of said transmission line to further digital television signal reception apparatus that recovers baseband digital television signals" is important because the rejections appear implicitly to rely on the well known principle that a new use of a known device or material may not be the subject matter of a valid patent. The lead case with regard to this issue is **Traitel Marble Co. v. U.T. Hungerford Brass & Copper Co.**, 18 F.2d 66, 68. There the device of the prior art was very similar to that of the patent in suit, but the purposes for which the two inventions were used and the results that they obtained were entirely different and distinct. Judge Learned Hand made the significant remark:

> "...but in view of fact that McKnight's purpose and his result were quite different, structural distinctions which might be trivial became crucial."
>
> "Assuming, for argument, that the law is absolute that there can be no patent for the new use of an old thing, that is because the statute allows no monopolies merely for ideas or discoveries. If the thing itself be new, very slight structural changes may be enough to

> support a patent, when they presuppose a use not discoverable without inventive imagination. We are to judge such devices, not by the mere innovation in their form or material, but by the purpose which dictated them and discovered their function."

Traitel Marble Co. was cited with approval in **Shell Development Co. v. Watson, Comr. Pats.,** 149 F. Supp. 279, 113 USPQ 265 (D. D.C. 1957), aff'd per curiam 282 F.2d 861, 116 USPQ 428 (D.C. Cir. 1958). The PTO found two cases unpatentable because all the inventors did was to discover a new use for the composition described in a Canadian patent. The case included the following dictum:

> "We cannot close our eyes to the fact that many great discoveries involve merely the development of a new and unforeseen use of result of an existing structure. While the law forbids the granting of a patent for such new use on the theory that patents are granted not for intellectual discoveries but for physical embodiments of such discovers, nevertheless, as is indicated by Judge Learned Hand, when a new purpose is discovered, slight changes in the pre-existing device or composition of material may be sufficient to establish patentability, even if a similar difference without a change of use or purpose might not be sufficient."

The rejections of applicant's claims do not appear to have taken into proper account the purpose which dictated them and discovered their function.

In considering the patentability of applicant's claim 1, one is evaluating an antenna amplifier that is allegedly an improvement over the wideband low-noise amplifier previously used as an antenna amplifier. Applicant's claim 1 tuner for digital television signals within very-high-frequency or ultra-high-frequency bands prescribed for terrestrial television broadcast transmitters reduces the range of frequencies in the transmission line connecting the antenna amplifier to the further DTV signal reception apparatus. This facilitates terminating the transmission line properly and cutting it to such length as to avoid echoes that otherwise tax the digital filtering customarily used for echo suppression in the further DTV signal reception apparatus. The references that have been cited against applicant's claim 1 do not even recognize this problem existing for DTV signal reception apparatus receiving signals from an antenna via a transmission line. They provide no teaching that elements in their structures can help solve the echo problems that have caused

catastrophic loss of reception capability in DTV signal reception apparatus since DTV broadcasting began in the mid-90's.

The wideband low-noise amplifiers previously used as antenna amplifiers had problems with accommodating strong signals at some reception sites, which problem is described in the paragraph bridging pages 2 and 3 of applicant's specification. The prior approach to solving this problem was to install partial trap filters between antenna and LNA for the strong signals, but this solution is time-consuming and cumbersome for an antenna installer to execute. Applicant's variably-tuned antenna amplifier helps solve the problem automatically. Apparently, two searches have failed to turn up any art directly concerning variably-tuned antenna amplifiers for over-the-air broadcast TV signals received from terrestrial transmitters. There is no evidence in the current record that those of ordinary skill in the art had previously considered or employed electrically controlled antenna amplifiers for over-the-air broadcast TV signals received from terrestrial transmitters. It is likely that one of ordinary skill in the art would have dismissed the thought of variably-tuned antenna amplifiers because variable tuning is available in the DTV receiver itself. Also, the problems that would be posed by the packed spectrum for DTV were not commonly appreciated at the time applicant made his invention.

Claim 3 positively and definitely requires the transmission line that is several meters long. This element is absent in Figure 2 of patent No. 4,145,720, so a 35 USC 102 rejection of Claim 3 simply will not lie. As noted above, Weintraub *et alii* provide no suggestion of the transmission line that is several meters long, as might support rejection of Claim 3 under 35 USC 103. The inclusion of a transmission line that is several meters long for connecting their remote control device to further TV reception apparatus is contrary to the Weintraub *et alii* objective of using *wireless* transmission of remote control signals.

Claim 3 specifies that "the tuner of claim 1 is connected by said transmission line to frequency-conversion apparatus for converting said further amplified response to said first intermediate-frequency signal upward in frequency to generate a radio-frequency signal in a frequency range that can be detected by a broadcast digital television receiver". Note frequency conversion is from an IF signal that contains a full-spectrum *digital* TV signal, which is different from modulating a radio-frequency carrier with baseband video, color subcarrier and sound

subcarrier as Weintraub *et alii* apparently do in their *analog* TV signal reception apparatus. Elements **36** and **34** do not satisfy the claim 3 specification of the frequency-conversion apparatus. The Examiner is reminded that the Doctrine of Equivalence only concerns infringement; it is not available for establishing anticipation.

There is no anticipation under 35 U.S.C. § 102 unless all of the elements are found in exactly the same situation and united in the same way in a single art reference. Every element must be literally present, arranged as in the claim. **Richardson *v.* Suzuki Motor Co.**, 868 F.2d 1226, 9 USPQ2d 1913,1920 (CA FC 1989). There is no anticipation unless all of the same elements are found in exactly the same situation and united in the same way to perform the identical function in a single art reference. **Rite-Nail Packaging Corp. et al. v. Berryfast, Inc.**, 219 USPQ 104 (CA9 1983, holding invalid Aff'd).

Weintraub *et alii* demodulate amplified response to said first intermediate-frequency signal, which is a conversion *downward* rather than upward in frequency. Weintraub *et alii* separate the video, color subcarrier and intercarrrier sound components of the baseband signal and modify those components. These separation and modification procedures have no homolog in digital telelevision as broadcast in the United States. Blurring the differences between applicant's tuner for digital television signals and the tuner for analog television signals is arguably acceptable when just the tuners are under consideration. However, there are substantial and distinct differences between digital TV reception apparatus and analog TV reception apparatus when demodulation of the intermediate-frequency signal is also under consideration. Demodulation of analog TV video luminance signal is with reference to a carrier nominally 1.25 MHz from the edge of the 6 MHz TV channel. Demodulation of analog TV audio signal and video chrominance signal is with respect to other respective carrier frequencies. 8VSB DTV signals are demodulated with a single carrier nominally 310kHz from the edge of the 6 MHz TV channel.

The upward conversion of signal by elements **36** and **34** of Weintraub *et alii* is not converting said further amplified response to said first intermediate-frequency signal upward in frequency. It is the converting of a baseband signal upward in frequency, which baseband signal is not necessarily the same as the original modulation of the amplified response to said first intermediate-frequency signal supplied by the IF amplifier **20**. Upon reconsideration, it should be

clear to the Examiner that the Weintraub *et alii* device does not satisfy the test for anticipation set forth in **Rite-Nail Packaging Corp. et al. v. Berryfast, Inc.** and in **Richardson *v.* Suzuki Motor Co.**

The frequency-conversion apparatus of claim 3 is specified in claim 1 to be packaged separately from the tuner for digital television signals. The Figure 2 remote control apparatus of patent No. 4,145,720 packages its modulator **34** together with its tuner for analog television signals **17 - 20**, **22** and **23**. Packaging remodulation elements **34 - 36** together with demodulation elements **17 - 23** is necessary for carrying out the wireless remote control function. This teaches away from the claim 3 combination, which performs a different function.

If patent No. 4,145,720 is to be used for supporting rejection of claims 1 and 3, the rejection must be based on § 103, which takes differences into account. If the rejection is properly based on § 103, the doctrine of inherency is no longer available as the basis for rejection. The advantages of a device insofar as processing DTV signals is concerned can no longer be dismissed as having inhered in previous devices for processing analog TV signals, so the Examiner can avoid showing that those advantages were unobvious to those of ordinary skill in the art of digital television receiver design at the time applicant's invention was made. Inherency of an advantage and its obviousness are different questions; that which may be inherent is not necessarily known; obviousness cannot be predicated on what is unknown. **In re Spormann & Heinke**, 53 CCPA 1375, 363F.2d 444, 150 USPQ 449 (1966). A retrospective view of inherency is not a substitute for some teaching or suggestion in the prior art for supporting an obviousness rejection. **In re Rijckaert**, 9 F3d 1531, 28 USPQ2d 1953, 1957 (CA FC 1993).

Excising the "means for remodulating and transmitting electromagnetically the audio signal to a remotely located radio receiver on an unused channel via wireless transmission", which comprises elements 34 - 36 and the transmitting antenna, destroys the electronic guided remote control device of Weintraub *et alii* for its intended purpose. If proposed modification would render the prior art invention being modified unsatisfactory for its originally intended purpose, then there is not suggestion or motivation to make the proposed modification. **In re Gordon**, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (CA FC 1984); MPEP **§** 2143.01. If the proposed modification or combination would change the principle of operation of the prior art invention being modified, then

the teachings of the references are not sufficient to render the claims *prima facie* obvious. **In re Ratti**, 123 USPQ 349 (CCPA 1959), MPEP §2143.01.

Claim Rejections - 35 USC § 103

Claim 2 is rejected under 35 USC 103(a) as being unpatentable over U. S. patent No. 4,145,720 (Weintraub *et alii*) in view of U. S. patent No. 6,118,499 (Fang), which rejection is traversed for failing to make a *prima facie* case for obviousness.

Claim 2 is patentable on at least the same grounds that Claim 1 is, of course. The 35 USC 103 rejections of claims 2 and 23 are predicated on the supposition that claim 1 is anticipated. This supposition is shown to be mistaken, which rebuts the validity of the 35 USC 103 rejections of claims 2 and 23, requiring that the Examiner re-consider and re-state those rejection if they are to be maintained. However, the 35 USC 103 rejections are faulty on various other grounds, which the applicant will address in order to advance the prosecution more quickly.

The references are improperly combined as evidence of the obviousness of the claim 2 invention considered as a whole to one of ordinary skill in the art at the time applicant made his invention. "It is fundamental that rejections under 35 U.S.C. § 103 must be based on evidence comprehended by the language of that section." **In re Grasselli and Hardman**, 713 F. 2nd 731, 739, 218 USPQ 769, 775 (CA FC 1983) citing **In re McKellin, Mageli and D'Angelo**, 529 F.2d 1324, 1329, 188 USPQ 428, 432 (CCPA 1976).

The boilerplate recitation that the digital television signal has many advantages over its analog counterpart including much better image quality does not furnish an adequate rationale for combining the references. Judicial notice is not a substitute for finding a basis within the prior art for combining references, especially when no specific date is specified for the basis to have been established and when the party giving such notice has not established his credentials as an expert in the field.

An examiner should cite for actual consideration any art that he may consider pertinent and not rely on matters of judicial notice at exact point at which patentable novelty is argued. **Ex parte Cady**, 148 U.S.P.Q. 162 (POBA 1965). A "rote invocation" of the high level of skill in the art does

not provide the necessary motivation to combine the teachings of prior art to render a claimed invention obvious. **In re Rouffet**, 149 F3d. 1350, 47 USPQ2d 1453 (CA FC 1998).

The image quality of analog television can be superior to that of digital television, being free from annoying artifacts such as frame freezing and image blocking. Analog TV does not suffer from so-called "cliff effect" which causes catastrophic loss of reception during fades. Multipath distortion that creates acceptable ghosts in analog TV creates echoes in digital TV that defeat reception altogether. The push to digital television originated from the U. S. government's desire to recover portions of the public's broadcast spectrum for sale to private interests. Digital TV does have the advantage that the signal is less degraded in a system that uses multiple repeaters, but this advantage is not of particular importance in over-the-air broadcasting.

If one used digital demodulation circuitry to replace the analog demodulation portions of the Weintraub *et alii* electronic guided remote control device that relies on wireless transmission of control information, at best one will still have an electronic guided remote control device that relies on wireless transmission of control information. One does not arrive at applicant's combination in which a tuner supplies selectively amplified signals via a transmission line to demodulation and analog-to-digital conversion circuitry. In a proper obviousness determination "[w]hether the changes from the prior art are "minor, ... the changes must be evaluated in terms of the whole invention, including whether the prior art provides any teaching or suggestion to one of ordinary skill in the art to make the changes that would produce the patentee's device." **In re Chu**, 66 F.3d 292, 298, 36 USPQ2d 1089, 1094 (CAFC 1995) citing **Northern Telecom, Inc. *v.* Datapoint Corp.**, 908 F.2d 931, 935, 15 USPQ2d 1321, 1324 (CA FC), *cert. Denied,* 498 U.S. 920(1990); **In re Jones *v.* Hardy**, 727 F.2d 1524,1528, 220 USPQ 1021, 1024 (CAFC 1984). Further, an applicant's statement of the purpose of the work is not prior art. **In re Dow Chemical Co.**, 837 F2d 469, 5 USPQ2d 1529, 1531 (CA FC 1988).

Furthermore, one of ordinary skill in the digital TV receiver art would not find U. S. patents No. 4,145,720 and No. 6,118,499 susceptible of being usefully combined in the manner proposed by the Examiner. Any impetus to combine the references is clearly absent from the Weintraub *et alii* patent No. 4,145,720 which issued in 1979, more than a decade before the TV industry began to consider the transmission of digital television signals by terrestrial television broadcast transmitters

within the very-high-frequency or ultra-high-frequency bands. The rejection fails to take into account that digital TV signals are not simply the digitization of the standard analog TV signals such as NTSC signals. The baseband DTV signal is a succession MPEG-2-compliant data packets, each containing data concerning compressed video or audio information, not a baseband video signal with color and sound subcarriers. Replacement of the demodulator **21** in patent No. 4,145,720 with the demodulation and analog-to-digital conversion circuitry for digital TV signal will not provide the separate video, audio and color signals that Weintraub *et alii* specify in column 6, lines 13 - 32. There is no picture signal (0 - 4 MC) to be applied to picture amplifier **25**, no 4.5 MC sound carrier to be applied to sound amplifier **27**, and no 3.58 MC color signal subcarrier to be applied to color amplifiers **26** and **28**.

While Weintraub *et alii* do not specifically indicate the frequency of the intermediate-frequency signal amplified by amplifiers **19** and **20**, it is common knowledge among those skilled in the arts of TV receiver design that 45 MHz is the carrier frequency invariably used in single-conversion analog DTV receivers. This has been done to avoid image reception problems since the UHF band was opened to TV broadcasting. (Column 2, lines 33-36, of Fang's patent No. 6,118,499 is supporting evidence of the fact stated in the first sentence of this paragraph.) Fang teaches away from any combination with the Weintraub *et alii* patent No. 4,145,720. See column 2, lines 24 - 36, in which Fang indicates that his invention uses final intermediate frequencies completely below 20 MHz. To avoid the problem with image reception that is a problem with such low final intermediate frequencies, Fang's DTV receiver is a plural-conversion receiver. His DTV receiver uses tunable up-conversion to convert a selected one of received radio-frequency TV signals to an initial IF signal in contrast to the tunable down-conversion that the Weintraub *et alii* analog TV receiver uses. Fang's DTV receiver subsequently uses a down-conversion of the initial IF signal to a final IF signal, but this
down-conversion is not concerned with selecting one of a number of different TV signals. To one skilled in the arts of TV receiver design, the front-end arrangements of Fang and Weintraub *et alii* are clearly incompatible with each other.

Modifying Fang (which is a reference in the DTV field) to change its IF supply to the 45 MHz of Weintraub *et alii* (which is a reference in another field) renders Fang unsatisfactory for its originally intended purpose, as indicated by the Fang reference itself. Since a reference which

teaches away is a significant factor in determining obviousness, the nature of that teaching is highly relevant and must be considered. See **In re Gurley**, 31 USPQ 2d 1130 (CA FC 1994). If a proposed modification would render the prior art invention being modified unsatisfactory for its originally intended purpose, then there is no suggestion or motivation to make the proposed modification. **In re Gordon**, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (CA FC 1984); MPEP § 2143.01.

Modifying the Weintraub *et alii* FIGURE 2 wireless remote control for TV so as to transmit a frequency completely below 20 MHz renders the remote control unsatisfactory for its originally intended purpose, since TV receivers are not designed for receiving signals of such frequency.

Claim 23 is rejected under 35 USC 103(a) as being unpatentable over U. S. patent No. 4,145,720 (Weintraub *et alii*) in view of U. S. patent No. 4,551,688 (Craiglow), which rejection is traversed.

Applicant's claim 23 tuner for digital television signals replaces the wideband low-noise amplifier previously used in the art to drive the antenna-down-lead transmission line. Applicant does not use the phrase "antenna amplifier" to describe his apparatus, because it further includes a remotely and electrically controlled frequency converter. However, the principal thrust of applicant's invention clearly concerns amplification at the antenna.

Weintraub *et alii* describe an electronic guided remote control that communicates by wireless connection. They offer no particular teaching concerning antenna amplifiers or how to connect a television reception antenna to a television receiver. Any relevance of their U. S. patent No. 4,145,720 to amplifiers or alternative apparatus used to drive the antenna-down-lead transmission lines of TV receivers is established only through applicant's own teaching. It was pointed out in the decision made in **In re Dow Chemical Co.**, 837 F2d 469, 5 USPQ2d 1529, 1531 (CA FC 1988) that an applicant's statement of the purpose of his work is not prior art.

Craiglow describes a specific type of delayed AGC, which derives AGC signal from a log envelope detector responding to the final IF signal supplied from the IF amplifier **22**. Modifying U. S. patent No. 4,145,720 to use Craiglow's delayed AGC still results in an electronic guided remote control that communicates by wireless connection. This does not teach one of ordinary skill in the

art to make the changes that would result in applicant's apparatus to be used instead of the low-noise wideband antenna amplifier previously used. In a proper obviousness determination "[w]hether the changes from the prior art are "minor, ... the changes must be evaluated in terms of the whole invention, including whether the prior art provides any teaching or suggestion to one of ordinary skill in the art to make the changes that would produce the patentee's device." **In re Chu**, 66 F.3d 292, 298, 36 USPQ2d 1089, 1094 (CAFC 1995) citing **Northern Telecom, Inc. *v.* Datapoint Corp.**, 908 F.2d 931, 935, 15 USPQ2d 1321, 1324 (CA FC), *cert. Denied,* 498 U.S. 920(1990); **In re Jones *v.* Hardy**, 727 F.2d 1524,1528, 220 USPQ 1021, 1024 (CAFC 1984).

The combination of U. S. patent No. 4,145,720 and U. S. patent No. 4,145,720 is still missing critical elements of applicant's claim 23 invention. The references do not teach nor suggest the use of "electrically tuned radio-frequency amplifier circuitry" and "an electrically tuned local oscillator". These elements avoid having to go outdoors and climb up to an outdoor reception antenna in order to change channels on a TV set in the house.

As pointed out above in responding to the rejection of claim 1, the electrically tuned radio-frequency amplifier circuitry helps to solve automatically the problem of an antenna amplifier accommodating strong signals at some reception sites. The "envelope detector connected for developing an envelope detector response to said first intermediate-frequency signal" and the "automatic gain control signal generation circuitry connected for responding to said envelope detector response to generate said automatic gain control signal applied to said radio-frequency amplifier circuitry" provide further help for this problem. By reducing RF amplifier gain, strong adjacent-channel signals appearing in the RF amplifier response are less likely to generate cross-modulation and third-order intermodulation products that interfere with DTV reception.

The approach to examination of claim 23 is contrary to the statutory standard established within 35 USC 103 that the obviousness of the invention *considered as a whole* be considered when determining patentability. There is nothing in the cited references concerning antenna amplifiers or the inventive problem of an antenna amplifier automatically accommodating strong signals at some reception sites.

As **In re Chu** makes clear, whether or not it would be obvious to modify the remote control apparatus of Weintraub *et alii* to incorporate delayed AGC per Craiglow is beside the point in

evaluating patentability of applicant's claim 23 antenna amplifier. The modification results in an improved remote control apparatus for controlling remote TV receivers, not in applicant's antenna amplifier that is remotely controlled, so the obviousness of the invention has not been *considered as a whole, as* required by 35 USC 103.

Claim 23 originally depended from claim 1, and the rejection strongly suggests that the consideration made when evaluating patentability was whether it would be obvious to modify the claim 1 amplifier to incorporate delayed AGC per Craiglow. The rejection presumes claim 1 to be anticipated, so the doctrine of inherency can be relied on to overcome the lack of specific teaching in the references concerning antenna amplifiers. It is long and well established that it is not acceptable examination practice to evaluate patentability of a dependent claim based solely on its differences from a rejected base claim. The subject matter both of the dependent claim and the underlying base claim must be considered together as a whole to meet the mandate of the statute. The question under 103 is whether the subject matter as a whole would have been obvious. **In re Van Venrooy**, 56 CCPA 1199, 1203 n.4, 412 F.2d 250, 253 n.4, 162 USPQ 37, 39 n.4 (1969). See also **Harpman v. Watson, Comm'r Pats**. 181 F.Supp. 919, 923, 124 USPQ 169 (D.D.C. 1959), where the District Court stated:

> "This point, however, is but a single element in the attempt to take the plaintiff's invention apart bit by bit in order to show obviousness in each of its differences from the prior art. In determining patentability, however, we are not concerned with the obviousness ***of each bit*** when dissected out and after considering the applicant's disclosure, but with the obviousness of his ***whole*** invention as claimed." [Emphasis in original.]

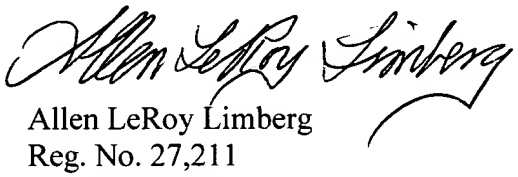
Mere existence of functional and mechanical equivalence does not establish obviousness; expedients which are functionally equivalent to each other are not necessarily obvious in view of one another; mandate of 35 USC 103 is that claimed subject matter be unobvious at time invention was made to a person having ordinary skill in involved art. **In re Scott**, 51 CCPA 747, 139 USPQ297 (1963). "Each-element-is-old" approach to patentability issue is improper. **Amstar Corp. v. Envirotech Corp. et al.** , 221 USPQ 649, 730 F.2d 1476 (CA FC 1983).

As clear from the commentary of Judge Learned Hand in **Traitel Marble Co.**, the analysis of the patentability of Claim 23 must consider the use that one of ordinary skill in the art would

have contemplated making of known elements at the time applicant made his invention and whether that use would have required inventive imagination. An important part of the invention process is discerning the problem that needs to be solved and formulating that problem in such way as to permit or substantially facilitate solution of the problem. It is evident from the rejection that the examination ignored any consideration of the inventive imagination required to re-formulate the problem of antenna amplification so as to avoid or substantially reduce tedious and laborious work during antenna installation.

Applicant notes that, since he filed his application, the FCC has ordered that a complete ATSC 8VSB DTV tuner be included in every TV receiver in order to expedite the transition from analog TV to digital TV. This is objective indication that those of ordinary skill in the art are generally unaware that TV receiver design could, as applicant teaches, be different from the general TV receiver design used for 65 years or so. Indeed, that it could be improved over.

Respectfully submitted,



Allen LeRoy Limberg
Reg. No. 27,211
(941)-624-4302

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